

1 **CLAIMS**

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3 What is claimed is:

4 1. A method comprising the steps of:

5 employing a virus-free certificate firewall in controlling and
6 filtering files using a virus-free certificate including:

7 • receiving a file;

8 if a virus-free certificate is required for the file,
9 determining whether the a virus-free certificate is already
10 associated with the file;

11 if a virus-free certificate is already associated with the
12 file, authenticating the associated virus-free certificate,
13 said virus-free certificate comprising a certificate
14 signature;

15 if the virus-free certificate is authenticated, determining
16 whether the file is virus-free or not:

17 if the file is virus-free, forwarding the file with the
18 associated virus-free certificate;

19 if the virus-free certificate is not authenticated or if no
20 virus-free certificate is associated with the file determining
21 whether the file is virus-free or not;

1 if the file is virus-free, associating with the file a new
2 virus-free certificate, and forwarding the file with the new
3 virus-free certificate.

4 2. The method according to claim 1, further comprising the
5 steps of:

- 6 • identifying the file in a table, said table comprising for
7 each identified file at least one anti-virus criteria;
8 • referring to the table and retrieving at least one of said
9 at least one anti-virus criteria,; and
10 • determining from said at least one anti-virus criteria
11 whether a virus-free certificate is required for the file
12 or not.

13 3. The method according to claim 2, wherein the step of
14 referring to the table and retrieving at least one of said at
15 least one anti-virus criteria includes the step of determining
16 whether or not the identified file satisfies the requirements
17 of the retrieved anti-virus criteria.

18 4. The method according to claim 1, wherein the virus-free
19 certificate comprises a file signature for determining that
20 the file is virus-free.

21 5. The method according to claim 1, wherein the virus-free
22 certificate includes a list of anti-virus programs that have
23 been executed on the file;

1 6. The method according to any one of the preceding claims
2 wherein the virus-free certificate (200) further comprises at
3 least one of the following:

- 4 • a file identification;
- 5 • a virus-free certificate authority identification;
- 6 • a public key for decrypting the file signature;
- 7 • a certificate signature for authenticating the virus-free
- 8 certificate; and
- 9 • an indication of the virus-free certificate validity.

10 7. The method according to claim 1, wherein said step of
11 determining whether the file is virus-free or not includes:

- 12 • decrypting the file signature using a public key comprised
- 13 in the virus-free certificate;
- 14 • hashing the file to generate a file digest; and
- 15 • comparing the decrypted file signature with the generated
- 16 file digest.

17 8. The method according to any one of the preceding claims
18 wherein said step of determining whether the file is
19 virus-free or not comprises the further step of

- 20 • if the file is not virus-free, discarding (413) the file.

21 9. The method according to claim 1, wherein the step of
22 authenticating the virus-free certificate includes:

23 validating the virus-free certificate, and

1 verifying that the list of said at least one anti-virus
2 program comprised in the virus-free certificate is included in
3 a list of anti-virus programs associated with the file in the
4 table.

5 10. The method according to claim 1, wherein the step of
6 associating with the file a new virus-free certificate
7 includes the step of requesting a virus-free certificate from
8 a virus-free certificate authority.

9 11. The method according to claim 1, wherein the step of
10 associating with the file a new virus-free certificate
11 includes the step of retrieving a virus-free certificate from
12 a cache, said cache storing existing virus-free certificates.

13 12. The method according to any one of the preceding claims
14 wherein the step of forwarding the file with the new
15 virus-free certificate includes updating a cache with the new
16 virus-free certificate.

17 13. A system comprising means adapted for carrying out the
18 method according to claim 1.

19 14. A computer program comprising instructions for carrying
20 out the method according to claim 1.

21 15. An article of manufacture comprising a computer usable
22 medium having computer readable program code means embodied
23 therein for causing employment of a virus-free certificate
24 firewall, the computer readable program code means in said
25 article of manufacture comprising computer readable program

1 code means for causing a computer to effect the steps of claim
2 1.

3 16. A computer program product comprising a computer usable
4 medium having computer readable program code means embodied
5 therein for causing employment of a virus-free certificate
6 firewall, the computer readable program code means in said
7 computer program product comprising computer readable program
8 code means for causing a computer to effect the steps of claim
9 1.

10 17. A program storage device readable by machine, tangibly
11 embodying a program of instructions executable by the machine
12 to perform method steps for employment of a virus-free
13 certificate firewall, said method steps comprising the steps
14 of claim 1.

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